

Examiner: Caillouet

February 13, 2009

TUBE JOINING DEVICE

DETAILED ACTION

1. The Amendment filed November 25, 2008 has been entered. Claims 1-3 and 6-9 were amended. Claims 4-5 and 11-12 were cancelled and claim 13 was added.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in prior Non-Final Office action mailed on August 6, 2008.

Claim Rejections - 35 USC § 112

3. Applicant's arguments, see page 13 of Remarks, filed November 25, 2008, with respect to 112 2nd paragraph rejections of claims 7 and 8 have been fully considered and are persuasive. The 112 2nd paragraph rejection of claims 7 and 8 has been withdrawn.

Claim Rejections - 35 USC § 102/103

4. Claims 1-3, 6-9, and 13 are rejected under 35 U.S.C. 103(a) as obvious over Ivansons et al. (US 5279685) in view of Fleischmann et al. (US 5059270).

As to claims 1 and 2, Ivansons et al. (Ivansons) discloses a device for selectively connecting and disconnecting plastic tubes which includes a welder (Abstract).

Ivansons discloses that the apparatus has a holding section which presses tubing into a flat state (column 7, lines 9-10), a cutting section (wafer) which cuts the tubes held in a

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flat state by the holding section (column 3, lines 45-47), heater elements for heating the cutting section (column 4, lines 11-13), a unit that moves the wafer from the start position to the cutting position (column 3 line 67- column 4, line 10), a sensor that detects the movement of the wafer (column 4, lines 14-19), a unit that moves the holding sections together in order to weld the tubing together (column 8, lines 16-27), and a computer which controls the power supply to the wafer heater and the wafer movement unit (column 5, lines 35-41). Ivansons further discloses that the computer checks the status of the necessary apparatus elements in order to determine if the device is ready for operation and if it will do a connect or disconnect with the tubes (column 10, lines 23-30). Ivansons discloses that the computer may use non-volatile memory which memorizes the connecting process information, whether the apparatus is in the connect/disconnect mode (column 11, lines 27-35) (Claim 2). Ivansons discloses that the computer stores whether the apparatus is in the connect/disconnect position (column 11, lines 16-30). Ivansons discloses that the controller tests the tubing to determine whether or not the tubes are loaded properly discloses that when the wafer begins heating the tubes the time is noted and saved by the controller, and the tubes are driven into the sides of the wafer at a controlled rate determined by the melt rheology (column 8, lines 10-15). Ivansons does not specifically state that power is supplied to an electrode to heat the wafer, but it is likely inherent that an electrode is used on the circuit that Ivansons computer uses to supply power to the heating unit for the wafer.

In the event that Ivansons uses an electric supply other than an electrode, it is the position of the examiner that use of an electrode to heat a cutting member for welding plastic tubes is well known in the art and would have been obvious to one of ordinary skill in the art to use as a heater in the apparatus of Ivansons. An example of this is taught by Fleischmann et al. (Fleischmann; US 5059270). Fleischmann teaches a process for the welding of plastic films (Abstract). Fleischmann teaches the use of a plastics welding electrode wherein the electrode is used to supply heat to a cutting blade which cuts and welds the plastic film (column 4 lines 57-68). It would have been obvious to one of ordinary skill in the art to use a well-known method of heating a cutting blade/wafer for the welding of plastics such as the use of an electrode.

Claims 1-2 both recite the limitation "wherein the controlling section judges, when power is supplied, that a reset operation is necessary when the information memorized in the non-volatile memory is information expressing that the apparatus is in the connection operation state,". From this statement, it is unclear whether the controller must be programmed with this control logic or only has to be capable of being programmed with this control logic. Examiner finds that since the apparatus of Ivansons has a controller with non-volatile memory that is capable of being programmed with this control logic it anticipated the limitation listed in the claim language.

As to claim 3, Ivansons discloses the use of a lock lip that prevents the tube holding means from disengaging with the tubes (column 4, lines 23-43). Ivansons further discloses that a sensing means (column 4, lines 63-66) can be included so that the computer can ensure the clamps are in their closed position before starting the

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welding process (column 7, lines 60-64). Claim 3 further recites the limitation that while in the connecting state, the controller detects that the cutting section is in the tube cutting position, that the holding section locks are engaged, the controller judges that a reset operation is necessary and initiates the reset operation. From this statement, it is unclear whether the controller must be programmed with this control logic or only has to be capable of being programmed with this control logic. Examiner finds that since the apparatus of Ivansons has a controller with non-volatile memory that is capable of being programmed with this control logic it anticipated the limitation listed in the claim language.

As to claim 6, the method of claim 2 is taught as seen above. Ivansons discloses the use of sensors to detect whether the holding sections have reached a position where the tubes may contact each other and thus form a weld (column 5, line 63-column 6, line 2). Ivansons discloses that the computer stores whether the apparatus is in the connect/disconnect position (column 11, lines 16-30).

As to claims 7-8 and 13, the method of claim 2 is taught as seen above. As stated previously, Ivansons discloses a unit that moves the wafer from the start position to the cutting position (column 3 line 67- column 4, line 10), a sensor that detects the movement of the wafer (column 4, lines 14-19). Ivansons discloses that the apparatus has a wafer supply section which supplies wafers to the cutting section (column 7, lines 33-40). The nonvolatile memory remembers the exchange process for disposing of a used wafer and inserting a new wafer for the process (column 7, lines 40-43; column 8, lines 16-23). The computer also determines whether a new wafer is loaded properly

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before allowing the welding process to begin (Id.). Ivansons further discloses that during the disconnect process, exchange information in the non-volatile memory is used by the computer change the exchanged status of the wafer to unexchanged status so as to convey the used wafer in the disconnect process to the wafer removal station after performing the disconnect process (column 9, lines 39-45).

As to claim 9, the method of claim 2 is taught as seen above. Ivansons discloses the use of a lock lip that prevents the tube holding means from disengaging with the tubes (column 4, lines 23-43). Ivansons further discloses that a sensing means (column 4, lines 63-66) can be included so that the computer can ensure the clamps are in their closed position before starting the welding process (column 7, lines 60-64).

As to claims 11 and 12, Ivansons et al. (Ivansons) discloses a device for selectively connecting and disconnecting plastic tubes which includes a welder (Abstract). Ivansons discloses that the apparatus has a holding section which presses tubing into a flat state (column 7, lines 9-10), a cutting section (wafer) which cuts the tubes held in a flat state by the holding section (column 3, lines 45-47), an heater elements for heating the cutting section (column 4, lines 11-13), a unit that moves the wafer from the start position to the cutting position (column 3 line 67- column 4, line 10), a sensor that detects the movement of the wafer (column 4, lines 14-19), a unit that moves the holding sections together in order to weld the tubing together (column 8, lines 16-27), and a computer which controls the power supply to the wafer heater and the wafer movement unit (column 5, lines 35-41). Ivansons further discloses that the computer judges checks the status of the necessary apparatus elements in order to

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determine if the device is ready for operation and if it will do a connect or disconnect with the tubes (column 10, lines 23-30). Ivansons also discloses the use of a lock lip that prevents the tube holding means from disengaging with the tubes (column 4, lines 23-43). Ivansons further discloses that a sensing means (column 4, lines 63-66) can be included so that the computer can ensure the clamps are in their closed position before starting the welding process (column 7, lines 60-64). Ivansons discloses the use of a visual display device to for the computer to indicate such things as whether the wafer is properly loaded (column 8, lines 29-31) or if the welder is in the connect/disconnect mode (column 9, lines 8-10). Ivansons further discloses that the computer may use non-volatile memory which memorizes the connecting process information and whether the apparatus is in the connect/disconnect mode (column 11, lines 27-35). Ivansons discloses that if a reset operation is necessary upon start up of the apparatus the display section will display an error indication (column 7, lines 40-43).

Ivansons does not specifically state that power is supplied to an electrode to heat the wafer, but it is inherent that an electrode is used on the circuit that Ivansons computer uses to supply power to the heating unit for the wafer. It is the position of the examiner that use of an electrode to heat a cutting member for welding plastic tubes is well known in the art and would have been obvious to one of ordinary skill in the art to use as a heater in the apparatus of Ivansons. An example of this is taught by Fleischmann et al. (Fleischmann). Fleischmann teaches a process for the welding of plastic films (Abstract). Fleischmann teaches the use of a plastics welding electrode wherein the electrode is used to supply heat to a cutting blade which cuts and welds the

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plastic film (column 4 lines 57-68). It would have been obvious to one of ordinary skill in the art to use a well-known method of heating a cutting blade/wafer for the welding of plastics such as the use of an electrode.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as obvious over Ivansons et al. (US 5279685) in view of Fleischmann et al. (US 5059270), as applied to claim 3 above, and further in view of Sano et al. (US 6463979).

Ivansons fails to disclose the use of a solenoid and a plunger to help ensure that the holding members stay in the closed position. Sano et al. (Sano) discloses a tube connecting apparatus for melting to cut flexible tubes for connecting the tubes by mutually contacting the cut end faces (column 1, lines 7-9). Sano teaches the use of a solenoid and a plunger to help ensure that the holding members stay in the closed position (column 15, lines 23-29). Sano teaches the use of the solenoid and the plunger prevents the clamps from being erroneously opened during the welding process. It would have been obvious to one of ordinary skill in the art to incorporate the teachings of Sano et al. into the apparatus of Ivansons et al. because Sano et al. teaches that the use of a solenoid and plunger ensure that the holding members don't erroneously open during the process and allow unwanted movement of the tubes.

Response to Arguments

6. Applicant's arguments filed November 24, 2008 have been fully considered but they are not persuasive.

Applicant argues on pages 13-15 of the Remarks that Ivansons does not anticipate Applicant's invention because Ivansons does not disclose that the controller judges whether a reset operation is necessary and initiates reset operation if deemed necessary. As stated in the rejection above, it is unclear from the claim language whether the controller must be programmed with this control logic or only has to be capable of being programmed with this control logic. Examiner finds that since the apparatus of Ivansons has a controller with non-volatile memory that is capable of being programmed with this control logic it anticipated the limitation listed in the claim language.

7. The following claim 1 drafted by the examiner and considered to distinguish patentably over the art of record in this application, is presented to applicant for consideration:

Claim 1, line 25, after "wherein" – "the control section is programmed to judge" would replace "the controlling section judges".

Examiner notes that controllers "programmed to" carry out a specific function have been held patentably distinct from those that aren't programmed to carry out said function.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER C. CAILLOUET whose telephone number is (571)270-3968. The examiner can normally be reached on Monday - Thursday; 9:30am-4:00pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Phillip Tucker can be reached on (571) 272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Christopher C Caillouet/
Examiner, Art Unit 1791

/Mark A Osele/
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